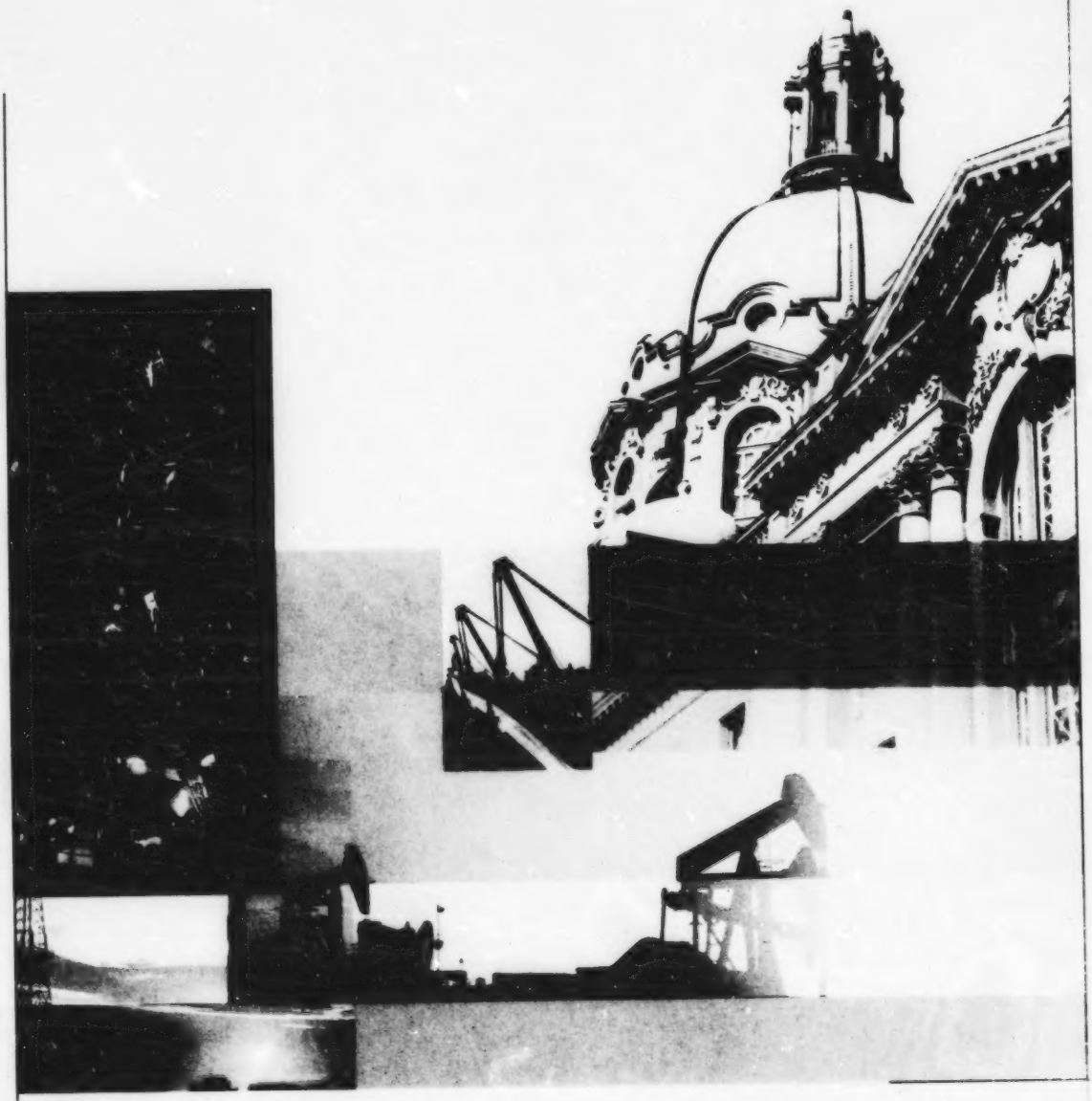


Alberta's Oil and Gas Tenure

Alberta

Forward

The Alberta Department of Energy is responsible for administering the legislation that governs the ownership and administration of Alberta's oil, gas, oil sands, coal, metallic and other mineral resources. The Department's major objective is to manage these non-renewable resources to ensure their efficient development for the greatest possible benefit to the province and its people.

This publication covers the administration of the province's oil and gas rights by the Tenure Business Unit. The Oil Sands Business Unit and the Coal and Other Minerals Business Unit administer oil sands, coal and other mineral rights, respectively.

The responsibilities of the Tenure Business Unit, since 1930, have been integral to what is now the Department of Energy. The Business Unit is responsible for all aspects of Crown oil and gas tenure policy, other than those related to the payment of royalty, and manages more than 87,000 active petroleum and natural gas agreements.

The Tenure Business Unit interacts frequently with industry to ensure that Alberta's tenure legislation, business rules and policies evolve with the changing needs of government and industry.

This publication describes the development of the system used by the Province of Alberta under which the private sector acquires tenure to Crown oil and gas rights. It is written for oil and gas administrators in both the public and private sectors, and for anyone interested in the principles and policies under which the Department of Energy interacts with the oil and gas industry. It should be read in the context of the Mines and Minerals Act and associated regulations, and the Information Letters and Bulletins published from time to time by the Department.

The information contained in this publication is of an explanatory nature, and is intended to provide an overview of Alberta's petroleum and natural gas land tenure system. It covers the period from 1930, when the province assumed control of its energy and other resources, until 2002.

In 1978, the Department of Energy (formally the Department of Energy and Natural Resources) adopted the metric system of measurement for all administrative purposes. Metric units are used throughout this paper; although most dimensions quoted have their origin in the imperial system. (See Glossary for individual metric terms and their imperial equivalents.)

Forms, guides, and other documents containing more detailed information are available from the Department's web site at:
www.energy.gov.ab.ca

The Mines and Minerals Act and the associated regulations remain the authority for any administrative and regulatory procedure.

Introduction

The mineral rights in approximately 81 percent of Alberta's 66 million hectares are owned by the provincial Crown and managed by the Department of Energy. The departments of Environment and Sustainable Resource Development administer complementary policies governing the management of water resources and renewable natural resources, and the Alberta Energy and Utilities Board (EUB) regulates oil and gas activities in the province.

The remaining 19 percent of the mineral rights in the province are held by the federal Crown within national parks and Indian reserves, by the successors in title to the Hudson's Bay Company, by the national railway companies and by the descendants of original homesteaders through rights granted by the federal Crown before 1887. These rights are referred to in the legislation and in this paper as "freehold rights."

Orderly development of the province's oil, gas and other mineral rights is essential to the viability of the non-renewable resource industries and the provincial economy. It is important that an acceptable return be realized, both by the people of Alberta and by the producers. While managing a depleting resource, a major objective has always been to ensure the maintenance of an attractive investment climate for the oil and gas industry.

Alberta's oil and gas tenure legislation has evolved in response to the changing environment and requirements of the oil industry and the government. Three key principles have remained constant throughout this process:

(1) No tenure agreement conveying rights is necessary for methods of exploration other than well drilling. This means that geophysical work (including the drilling of shot holes) may be performed on either undisposed or disposed Crown oil and gas rights, subject only to access permission from the surface owner and non-exclusive operating authority from the Department of Sustainable Resource Development.

(2) Once discovered, there is no obligation for oil and gas to be produced.

(3) Tenure is granted beyond the term of an agreement on the basis of the agreement's capability to produce in paying quantity. Wells may not actually be producing because of market conditions or lack of facilities, however, reasonable reserves must be demonstrated.

102-05704/

Past Tenure Systems

Between 1670 and 1869, the mineral rights in the area that is now Manitoba, Saskatchewan, Alberta and the Northwest Territories were owned by the Hudson's Bay Company. In 1869, the Company surrendered most of its land to the Dominion of Canada, retaining 18,000 hectares in settlements and trading posts.

In exchange, it was granted five percent of the land surveyed in the fertile belt (about 961,600 hectares in Alberta), including the mineral rights for those lands.

Until 1930, the Crown mineral rights in Alberta were controlled by the Government of Canada and administered by the federal Department of the Interior. On October 30, 1930, those rights were transferred to the Province of Alberta. At first the Administration of Natural Resources (Temporary) Act continued the statutes and regulations of the Government of Canada pertaining to the natural resources in the province. Alberta's Department of Lands and Mines administered this Act until June 18, 1931, when the Provincial Lands Act and associated regulations came into force. These regulations were almost identical to the former federal regulations.

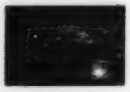
The Mines and Minerals Act came into effect on April 1, 1949, and applied to all Alberta Crown petroleum and natural gas rights formerly governed by the Provincial Lands Act. Simultaneously, the Alberta Department of Lands and Mines was succeeded by two separate departments: the Department of Mines and Minerals, responsible for the administration of non-renewable resources, and the Department of Lands and Forests with similar responsibilities for renewable resources.

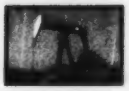
AGREEMENTS

Prospecting Permits/ Petroleum and Natural Gas Leases

In 1931, the regulations governing permits to prospect for petroleum and natural gas and the Petroleum and Natural Gas Regulations under the Provincial Lands Act were announced. Prospecting permits (the term "prospecting" was used to denote exploration as it is known today) were granted by the Department of Lands and Mines for one year on a maximum area of 768 hectares. The permit holder was required to conduct core drilling on the permit area to earn the entire area in lease. Petroleum and natural gas leases with a 21-year term were granted to a maximum of 768 hectares and were renewable for a further 21 years if they were capable of producing petroleum or natural gas in commercial quantities.

Once a lease was granted, a lessee was required to have "machinery and equipment suitable for carrying on drilling operations" on site within one year, and to begin drilling within 15 months. The regulations allowed the grouping of leases for operating purposes so that activities such as drilling could be concentrated on one or more of the grouped leases rather than be simultaneously conducted on all. The maximum area that could be included in a group was 8,000 hectares. Rentals, established in 1920 at the rate of $1.25/hectare for the first year and $2.50/hectare for subsequent years, did not change.





By 1936, there were great advancements in geological knowledge and geophysical techniques for locating potential oil and gas-bearing geological structures. It became apparent that prospecting permit areas were too small for the scale of exploration required. The regulations governing the issuance of prospecting permits were amended to allow the permit size to be at the discretion of the Department. The maximum size of lease groupings was also increased from 8,000 to 20,000 hectares. In addition, the lessee could use drilling expenses as a credit towards satisfying the lease rentals up to and including the 12th year of the lease.

New Petroleum and Natural Gas Lease Regulations governing the disposition of oil and gas rights were established in 1941, increasing the area obtainable under lease from 768 to 3,840 hectares.

Petroleum and Natural Gas Reservations

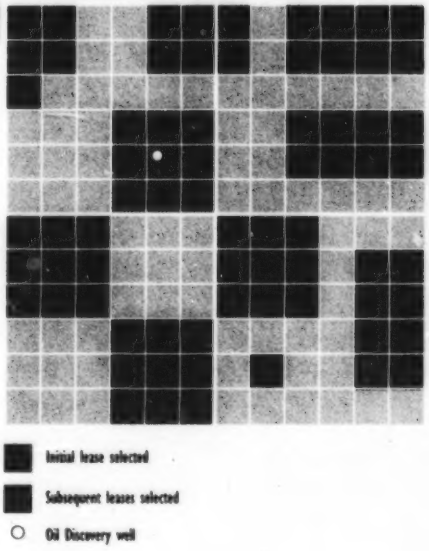
Prospecting permits were discontinued in 1937 and replaced by a new form of disposition called the petroleum and natural gas reservation. Up to 40,000 hectares (156 sections) could be included in a reservation, allowing exploration over large areas where little was known about the geology and the potential for hydrocarbons.

A reservation was acquired by competitive bid. The area available was advertised by a notice posted in the Mining Recorder's Office, and a sale date was specified. Interested parties submitted sealed bids, and the reservation was awarded to the highest bidder. If no bid was received, the reservation became available the following day for a minimum-filing fee on a first come, first served basis.

Loosely specified work requirements were imposed on the reservation holder, to ensure that an exploration effort was maintained throughout the life of the reservation. The principle of grouping was carried over from the prospecting permit, and reservations could be grouped to a maximum of 80,000 hectares (312 sections).

Figure 1

Lease selection from a Petroleum and Natural Gas Reservation



Completion of the work program entitled the reservation holder to select 50 percent of the reservation area in lease blocks. Each block could be no larger than a nine-section square (4.8 km by 4.8 km) or an eight-section rectangle (3.2 km by 6.4 km), and the leases had to be checker-boarded or separated by corridor acreage at least 1.6 km (one section) wide. In the event of a commercial oil discovery, the reservation holder was obligated to make a lease selection around the discovery within three months, and an equal area surrounding the lease reverted to the Crown, while the balance of the reservation continued in effect *(See Figure 1)*.

The corridor acreage was designated Crown Reserve, and it reverted to the Crown at the expiry of the reservation. Its purpose was to ensure that a company discovering a hydrocarbon pool would be forced to return part of the pool to the Crown, to be subsequently made available to industry for further development. In combination with the market prorationing system, it was thereby possible to ensure that those participating in the development, after the initial exploration phase, could be assured of a market. Although it created a complex leasing system, it provided a highly competitive situation for companies of all sizes.

Petroleum and natural gas reservations remained in effect until December 1982, when the last reservation was cancelled in the Department's records.

Provincial Reserves

In 1941 the Department identified 15 areas throughout the province where a high degree of control was desirable in the disposition of mineral rights, and enacted legislation withdrawing those areas from disposition under the normal lease and reservation regulations. These areas became known as Provincial Reserves.

In 1944, new regulations were enacted governing the disposition of these Provincial Reserves. One hundred percent of the area within them was declared to be Crown Reserve, as opposed to the 50 percent in the balance of the province. Petroleum and natural gas reservations were disposed at quarterly Crown Reserve Sales, but the Department reserved the right to reject bids, and filing the following day was not permitted. These reservations were also subject to 50 percent surrender at the time of lease selection.

Natural Gas Licences and Leases

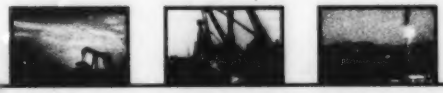
Although the search for hydrocarbons to this time was primarily directed at crude oil, increasing amounts of natural gas were being discovered. At the same time, major limitations were recognized in the lease block and corridor approach to gas pool development. Most of the gas pools being discovered were inaccessible to market and were thus uneconomic to develop, particularly at the prevailing gas prices.

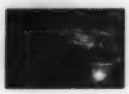
The natural gas licence was therefore introduced in 1951. Upon discovery of natural gas, this mechanism allowed the holder of a petroleum and natural gas reservation to earn up to 100 percent of the natural gas rights underlying his reservation.

The area selected for a natural gas licence had to be contiguous (all lands in actual contact and no corridors or space left between selected lands). The lease block and Crown Reserve corridor requirements were waived, but the maximum size of the licence could not exceed 36 sections. The initial term of the natural gas licence was six months, renewable for five six-month periods. A continuous drilling program was required, with the first well being spud within three months of the issuance of the licence and each subsequent well drilled within three months of the previous one.

Licences were zone-specific. The licence zone was designated by reference to a log of the discovery well. If further drilling discovered natural gas in paying quantities in a zone other than that contained in the licence, the discovered zone could be included in the original licence.

The natural gas lease, introduced in 1952, allowed holders of natural gas licences to earn 21-year natural gas leases after the continuous drilling program. The natural gas lease was confined to the zone(s) proven capable of producing natural gas in paying quantity. There was no set requirement for lease configuration, but only complete gas spacing units could be selected.





Petroleum and natural gas reservation holders who earned natural gas licences were required to surrender the gas-bearing zones from the reservation to include them in the natural gas leases granted following the licence. At the expiry of the reservation, the holder was permitted to select petroleum and natural gas leases devoid of the natural gas, in accordance with the normal leasing procedures for petroleum and natural gas. The result, on a typical reservation, was the selection of petroleum and natural gas leases, forming the typical lease block and corridor pattern, with natural gas leases superimposed upon both the lease and the intervening corridor.

Crown Reserve Natural Gas Licences

By 1952, it had become apparent that certain areas of the province had greater potential for natural gas production than for crude oil. There was a need to stimulate long-range exploration for natural gas that was considered marginally economical. It was therefore decided to make the natural gas rights within Crown Reserves in these gas-prone areas available on a competitive bid basis. The new form of agreement was known as a Crown Reserve natural gas licence, and it granted natural gas rights in all zones.

The tenure conditions for the Crown Reserve natural gas licence were identical to those for the normal natural gas licence selected from reservations. The maximum licence size was 36 sections and term was 2-1/2 years. Generally, the licensee had to begin drilling within six months of the licence date. Holders of these licences could acquire 21-year natural gas leases based on the number and depth of productive gas wells drilled into the licence.

Crown Reserve Drilling Reservations

Crown Reserve drilling reservations were introduced in 1954 to stimulate drilling to specific target zones believed to have good prospects for crude oil. Crown Reserve rights were made available for public tender at industry's request, with the requester also specifying the zone to be evaluated by drilling to earn leases. This focused the attention of all prospective bidders on specific geological plays; the rights were advertised in a sale notice that specified the number of sections that could be earned as lease after drilling to the zone, and the reservation was awarded to the highest bidder.

The size of the Crown Reserve drilling reservation, and the number of sections that could be selected as lease, increased with the depth of the prospective zone. If natural gas was encountered, the natural gas licence option — allowing 100 percent lease coverage of the gas-bearing zone(s) to a maximum of 36 sections — was available, provided that the reservation's target zone was reached.

The reservation holder was required to begin drilling within one year of the reservation date, and to continue drilling until the presence of oil in paying quantity was discovered, with intervals of not more than three months between the abandonment of one well and commencement of the next. If the target zone was penetrated, 25 percent of the drilling reservation area could be converted to petroleum and natural gas lease. This form of drilling reservation could be renewed every six months, for a maximum of three years, from the date of issuance. The entire cost of drilling performed on the drilling reservation could be applied as a dollar credit towards the first year's rentals on the leases earned.

Petroleum and Natural Gas Permits

In 1962 it was recognized that the focus of exploration activity was moving into the central basin area in pursuit of deeper multi-zone prospects, and as a result activity was declining in the south and east portion of the province. To maintain interest in the latter area, Block A was created, comprising Townships 1 to 64 between the fourth and fifth meridians. The Crown Reserve concept was eliminated in Block A, and a new form of disposition was created: the petroleum and natural gas permit. The most significant characteristic of this type of agreement was 100 percent leasability for petroleum and natural gas upon completion of drilling a well to a zone that could be considered prospective for hydrocarbons. Petroleum and natural gas permits could be acquired in the same way as petroleum and natural gas reservations: there was no minimum bid requirement, and parcels for which no bid was received could be acquired by filing the day after the sale.

Significant Historical Events between 1970 and 1976

During the first half of the 1970s, a number of significant international, national and provincial events took place that had dramatic repercussions on the province's oil and gas rights tenure system. These events included:

1970 Middle Eastern countries, which produced most of the word's crude oil, expressed their desire for greater participation in oil company operations in their countries.

1971 Canadian exploration by the major companies shifted from Alberta to the northern frontier. The Alberta government recognized the need to stimulate oil and gas activity in Alberta.

1972 Public hearings on methods of stimulating activity levels were held with the petroleum industry. The Alberta government recognized the need for greater accessibility to oil and gas rights by the active smaller companies and thus began a review of the entire mineral rights tenure system. The government also introduced an exploratory drilling incentive system to encourage the search for new oil and gas reserves.

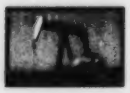
1973 The Organization of Petroleum Exporting Countries (OPEC) implemented major increases in crude oil prices. The Alberta government increased royalties on crude oil, and the petroleum industry's preoccupation with pricing and royalty matters resulted in suspension of its discussions with the Alberta government on the oil and gas rights tenure system.

1974 The Alberta Petroleum Marketing Commission was established to supersede price control by a small number of major multi-national companies. Further Crown royalty increases occurred and changes to federal income tax legislation ended the deduction of provincial royalties in calculating federal tax.

1975 The geophysical incentive system was introduced to sustain a desired level of geophysical activity.

Transition to the Present Tenure System

1976 - 1984



By the mid-seventies a number of concerns about the existing tenure system had been identified, and the Department of Energy held formal and informal discussions with interested industry associations and individuals. One of the most important issues was the stagnation in the exploration of deeper geological zones. Some operators were holding large lease blocks by production from shallow zones. Many smaller independent oil and gas companies felt that this was delaying the development of, or even sterilizing, the deeper zones, and the Department shared their concern.
Other issues included:

- the need to stimulate drilling activity
- the decreasing possibility of discovering new oil pools that would exceed the areal extent of a lease block
- the need to rationalize and reduce the number of types of agreements being issued (petroleum and natural gas reservations, permits and leases, natural gas licences and leases, Crown reserve natural gas licences and Crown reserve drilling reservations were all still in effect)

In 1976, the government passed amendments to the Mines and Minerals Act, with the following features:

- Two new forms of agreement were introduced - the petroleum and natural gas licence, which had a term of two, four or five years depending on its location in the province, and the five-year petroleum and natural gas lease.
- The licence was intended to operate as a short-term exploratory agreement, and the lease as a longer-term development agreement. Both could be acquired by public tender.
- There was a minimum size requirement and restrictions for licences regarding location. For example, a licence could only be posted in an area where there was no established production.
- Licence lands could be "earned" by drilling and subsequently converted to lease. Lease earning was based on the depth of the well drilled.
- Two licences could be grouped for the drilling of a single well, and the lands earned could be shared between the two licences at expiry.
- The licence was converted to a lease for a period of five years.
- Rental waivers were used to encourage early drilling on licences. They remained in effect for licences issued before January 1, 1998 but did not apply to any licences issued after that date.

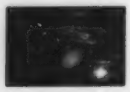
- A lease could be continued beyond its primary term if the lessee could demonstrate that it was capable of producing petroleum or natural gas in paying quantity at expiry. However, the rights below the deepest productive zone in the lease would revert to the Crown, as would any lands that were considered to be non-productive. This new principle was aimed at freeing up the deeper rights that were sterilized by the former practice of continuing all rights in a spacing unit, regardless of which zone was productive.
- All leases issued on and after July 1, 1976 were subject to deeper rights reversion, and the first deeper rights continuation occurred in 1981. The application of deeper rights reversion to existing 10 and 21-year leases was delayed until January 1, 1983 or the expiry date of the lease, whichever occurred later. This delay was intended to give the lessees of those agreements time to explore the rights below existing productive horizons.
- Except in those instances where the ownership of a spacing unit was part freehold and part Crown, the acquisition of undisposed Crown petroleum and natural gas rights could be accomplished only through public tender.
- Petroleum and natural gas rights would be offered for public tender only if requested by industry.
- Petroleum and natural gas permits, petroleum and natural gas reservations, Crown Reserve natural gas licences and Crown Reserve drilling reservations were no longer issued. Those in force before 1976 were allowed to continue in effect until their terms expired or the agreement holders requested cancellation.

1985 – 1995

In 1985, the Mines and Minerals Act was once again revised. The Department's intent was to simplify Part 4 (then Part 5) of the Act, dealing with lease continuation, and to carry the principle of deeper rights reversion a step further into its final form. The most significant amendments were:

- The responsibility for identifying a productive lease and applying for continuation was shifted from the Department to the lessee. The Department hoped that this would discourage the practice of simply submitting rent for an expiring lease, and encourage lessees to apply for continuation, identifying the productive lands and zones.
- The provisions that allowed for the continuation of a single section containing a well that had drilled through expiry could now continue all of the lands being evaluated by the well, and the time frames were expanded so that a well that finished drilling within the last 90 days of the term would also qualify the lease for continuation.
- Notices of non-productivity were amended from a six-month duration to one year.
- The final stage of deeper rights reversion was implemented. The 1976 legislation had provided for continuation of all the productive lands in a lease to the deepest productive zone anywhere in the lease. This meant that an entire lease could be continued to the base of a deeper zone, even though only one spacing unit in it was productive from that zone, the others being productive from shallower zones. A notice of non-productivity was then served on the remaining unproven rights to complete the reversion six months later. Amendments were introduced that allowed each spacing unit within a lease to be continued independently, immediately freeing up all of the unproven rights.

A further legislative change was enacted on July 12, 1990 when the annual rental rate for virtually all mineral agreements was set at $3.50 per hectare. Rental rates had previously varied, according to the type of agreement, from $0.25 to $2.50 per hectare.



1995-1997

By 1995 a new list of issues had accumulated, some emanating from industry and some from the Department. From the Department's perspective, the most pressing was the dramatic increase in the number of leases that had been issued in the early and mid nineties that would begin to expire in 1998 - approximately double the number that had been the norm for the previous few years. Existing automated systems were already outdated, and would certainly not be adequate for the increased workload.

In addition, the Government of Alberta introduced legislation requiring the revision of all existing regulations, with a view to eliminating those that were unnecessary, and simplifying the remainder.

The Department decided to review its petroleum and natural gas tenure legislation, regulations, policies and business rules, and to involve the oil and gas industry as fully as possible in the review process. It established an Industry Advisory Committee, consisting of representatives from the major industry associations, and over the course of the following two years developed amendments to the Mines and Minerals Act and the associated regulations and business processes. This culminated in the Petroleum and Natural Gas Tenure Regulation, the Mines and Minerals Administration Regulation, the Crown Minerals Registration Regulation and the complementary amendments to the Mines and Minerals Act, all of which became effective on January 1, 1998.

1998 – 2002

In fall of 1995, the Department made a commitment to the industry associations to monitor the effectiveness of the tenure system on an ongoing basis. As a result, in June 1998 the Department met with the Industry Advisory Committee to consider some additional changes.

In January 1999, the Department proposed amendments to petroleum and natural gas licence groupings, offsets, section 16 continuations and offset compensation. The low response from industry, and a lack of industry consensus on licence administration, prompted a Round Table discussion in June 1999. The results were used to finalize the amendments to the Petroleum and Natural Gas Tenure Regulation, which took effect on January 26, 2000. The tenure system now in place is based on these latest amendments in addition to the major amendments introduced effective January 1, 1998.

The Industry Advisory Committee has remained active and is the primary vehicle for discussing future business changes.

Present Tenure System

ACQUISITION OF OIL AND GAS RIGHTS

The Department is authorized to dispose of petroleum and natural gas leases and licences:

- on application, if the Minister considers the issuance of the agreement warranted in the circumstances
- by way of sale by public tender conducted in a manner determined by the Minister, or
- pursuant to any other procedure determined by the Minister.

Sale by Public Tender

The majority of agreements are issued using the second method - sale by public tender.

The Department holds sales in Calgary at which agreements are advertised and awarded to the highest bidder. The word "sale" is used by tradition, although it is a misnomer, since the Crown always retains title to its minerals. The process is actually an auction by sealed tender, and the rights are leased, not sold, to the successful bidder.

Posting Request Cycle / Advance Booking

The normal posting cycle is 17 weeks, consisting of a two-week acceptance period, seven weeks for internal processing and eight weeks from the publication date of the Public Offering Notice to the sale date ***(See Figure 2)***. On average, 24 sales are held each year, at two-week intervals, and the dates of those sales and the corresponding acceptance periods are published by Information Letter two years in advance.

The Department also accepts an advance booking for an agreement when the requester wishes to time the acquisition of the agreement to an evaluation well being drilled to a depth greater than 3,000 metres. The advance booking is published a minimum of 16 weeks before the sale date.

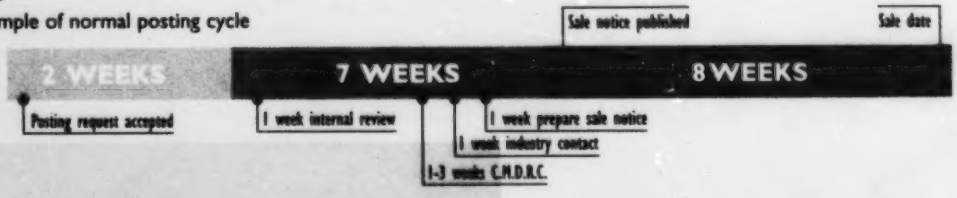
Requesting rights

Any company or individual who wishes to acquire petroleum and natural gas rights may ask the Department to make them available at a sale, using a standardized Posting Request form. The Department examines the requested rights to ensure that they are undisposed, and refers the request to the multi-agency Crown Mineral Disposition Review Committee (CMDRC). The CMDRC's responsibility is to identify any surface access restriction relating to the requested lands, and to provide the Department with full information on the nature of the restriction (for example, seasonal access restrictions for the protection of wildlife habitats). A description of the restriction, in the form of an addendum, will be attached to the rights when they are posted and issued.

The maximum size for any posting is 15 sections in the Plains Region, 32 sections in the Northern Region, and 36 sections in the Foothills Region. The minimum size for most parcels is the spacing unit for an oil well, except in the case where the Crown owns the petroleum and natural gas in only part of the spacing unit. For licences in the Plains Region, the minimum size is 6 full sections.

Figure 2

Example of normal posting cycle



Configuration of Request

A posting request may be made for all the rights in a spacing unit, or for only a portion of them. If all rights are available, a request may be made for:

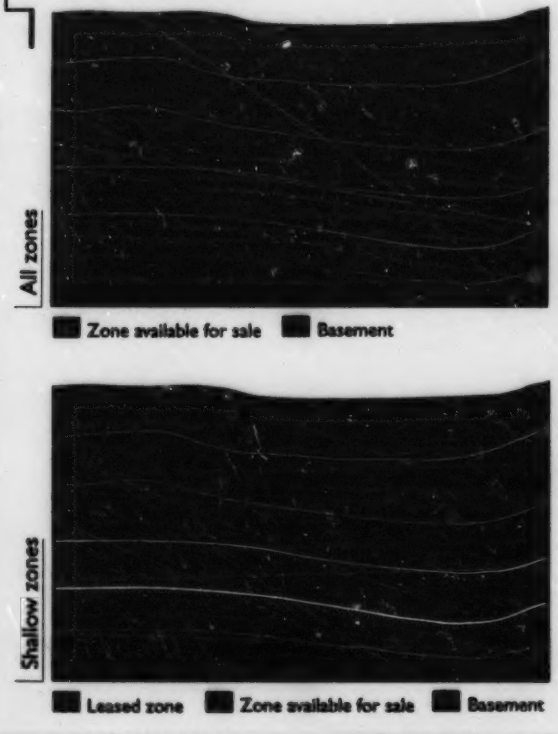
- all rights
- all rights from the surface to the base of a specified zone, or
- all rights below the base of a specified zone.

If there is an existing agreement in the spacing unit, so that not all of the rights are available, the following configurations are permitted:

- all available rights from the surface or the base of a specified zone to the top of the existing agreement, or
- all available rights from the base of the existing agreement to the basement or to the base of a specified zone *(See Figure 3)*.

Figure 3

Configurations of zones available for disposition



Public Offering Notice

A Public Offering Notice is published eight weeks before the date of each sale. The Public Offering Notice has five components:

- a page specifying the place, date and time of the sale, and instructions for submitting bids
- a list of the parcels offered at that sale, describing the lands and rights included in each one
- Appendix 1, which contains all of the Zone Designations referred to in the Notice
- Appendix 2, which contains all of the Deeper Rights Reversion Zone Designations referred to in the Notice
- Appendix 3, which contains all the addenda referred to in the Notice

The Public Offering Notice is distributed to a mailing list of companies and individuals, and is also made available on the Department's web site at: **www.energy.gov.ab.ca**

Submitting a Bid

A bid for a parcel should be submitted in typed form (mail or hand delivery) to one of the addresses specified in the Public Offering Notice, and must be received by 12:00 noon on the date of the sale. The sale closes at 12:00 noon precisely, and no offers submitted after that time will be accepted.

The bid must be in one of the prescribed formats, or it may be rejected. The offer must include the $500 application fee, the rental for the first year of the agreement of $3.50 per hectare, and a bonus bid. There is a standard minimum bid of $2.50 per hectare for leases and $1.25 per hectare for licences. Since March 1999, the Department has insisted on Electronic Funds Transfer (EFT) as the only method of payment at public sales.

Sale Results

While the results of each sale are normally published at 10:00 a.m. on the day following the sale, the Department reserves the right to delay publication in the event of an unusually large sale. Subscribers to the Department's electronic mailing list will receive the results at 9:00 a.m. on the day following the sale. The name of each successful purchaser and the amount of the bonus bid is included in the results, but no information is provided on unsuccessful bids.

Acquisition by Private Sale

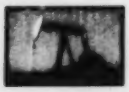
Where the petroleum and natural gas rights in a spacing unit are part Crown and part freehold, with the Crown portion comprising less than 50 percent of the smallest applicable spacing unit, the Department allows the party who controls the freehold portion to acquire the Crown rights by private sale.

Where an agreement contains the rights to a single substance (petroleum or natural gas) in a zone, the holder may acquire the rights to the other substance by private sale. The newly acquired rights are consolidated with the existing rights into a single agreement to prevent future separation.

A holder of an oil sands agreement can request a private sale of a Petroleum and Natural Gas agreement (as to natural gas only) containing rights corresponding to his oil sands rights.

AGREEMENTS

Petroleum and Natural Gas Licence



A petroleum and natural gas licence is issued for an initial term of two years if it is located in the Plains Region, four years in the Northern Region and five years in the Foothills Region ***(See Figure 4)***. These terms take into account the different geology, climatic conditions, topography and access restrictions of the three Regions.

A licence entitles the holder to drill for and recover oil and gas rights granted under the licence. Each licence carries with it an obligation to drill a well to evaluate the rights contained in the licence. This obligation can be satisfied by drilling on the location of the licence, or by grouping it with other initial term licences in the immediate area.

Groupings allow licensees to develop their best geological prospect and validate nearby licences, thereby reducing the need to drill unnecessary wells.

Figure 4

Map of Regions in Alberta

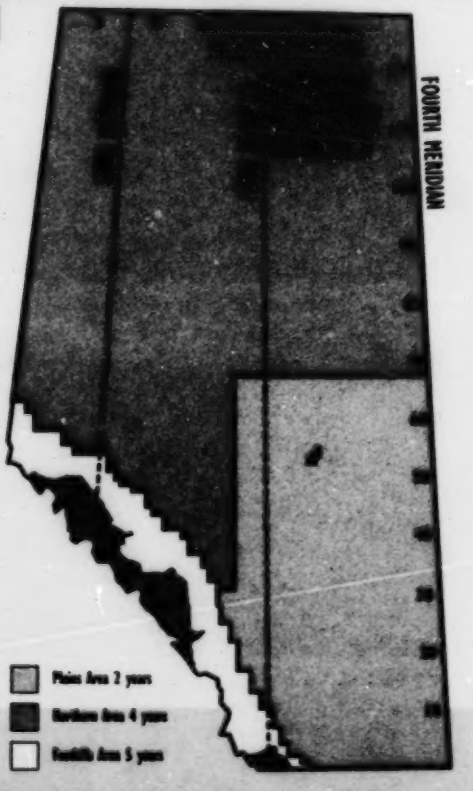
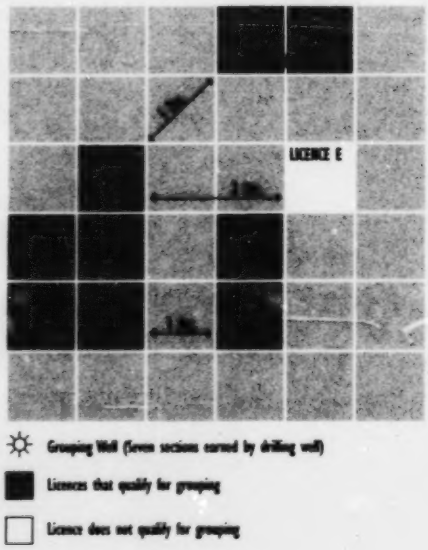


Figure 5

Grouping petroleum and natural gas licences

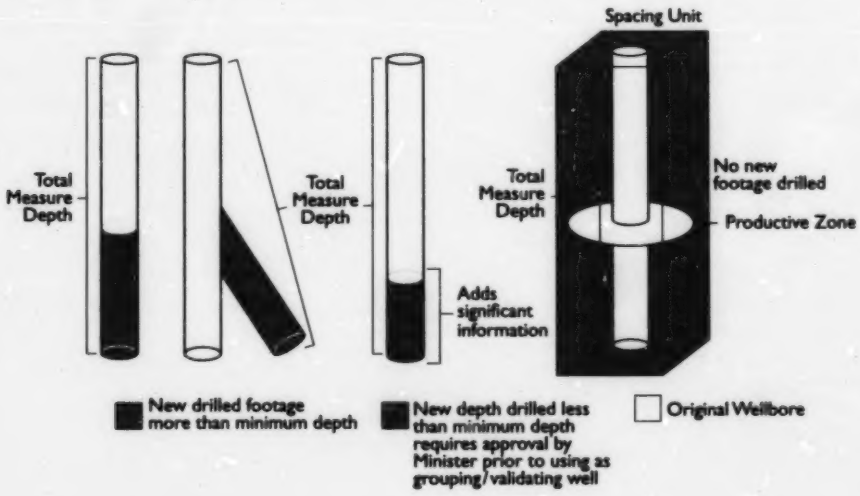

LICENCE E
Grouping Well (seven sections earned by drilling well)
Licences that qualify for grouping
Licence does not qualify for grouping

Since 2000, the Department has allowed an unlimited number of licences to be grouped horizontally or vertically, provided the licences are all in their initial term and provided each licence will be evaluated by the grouping well. The application for grouping must be received no later than one month following the rig release date of the grouping well. Each licence to be grouped must be separated from the licence containing the grouping well by not more than one intervening section, including the corners ***(See Figure 5)***.

Once a well has been drilled either on the licence itself or on a grouped licence, the licensee may validate licence lands for an intermediate term of five years. The well must evaluate rights that are contained in the licence, but is not required to encounter oil or gas - i.e., a dry and abandoned well will validate the prescribed area.

Figure 6

Re-entry wells as validating wells for petroleum and natural gas licences


Spacing Unit
Total Measure Depth
Total Measure Depth
Total Measure Depth
Adds significant information
No new footage drilled
Productive Zone
New drilled footage more than minimum depth
New depth drilled less than minimum depth requires approval by Minister prior to using as grouping/validating well
Original Wellbore

A re-entered well may be used for grouping and validating purposes provided it is drilled or whipstocked to at least the prescribed minimum depth beyond the total measured depth of the well prior to the re-entry ***(See Figure 6)***.

Wells that have been re-entered but not deepened may be considered as validating the spacing unit of the well down to the base of the deepest zone proven productive.

If a spacing unit is located partly within and partly outside a licence, a well drilled on the outside portion may be considered a grouping well and/or a validating well. No part of the spacing unit may be within any other licence that is still in its initial term, and the well must meet the usual conditions of being drilled during the initial term of the licence to a depth of at least the prescribed minimum depth and evaluating the rights contained in the licence ***(See Figure 7)***.

When licences were introduced in July 1976, a well was required to be drilled in the location of the licence to qualify for validation entitlement. The Department believes that the best way to evaluate a licence is to drill a new well or re-enter an existing well bore within the location of the licence. There is, however, a provision to accommodate off-location wells in rare instances, primarily where the terrain was such that the drilling of an on-location well would cause serious damage to the environment. Approval must be obtained prior to drilling the off-location well for validating a licence. These "off-location" wells cannot be used for grouping purposes.

The area validated is directly related to the depth of the well drilled as calculated in Schedule 2 of the Petroleum and Natural Gas Tenure Regulations - for example, a 1,500 metre well drilled on a Plains licence will validate six sections, while a 3,000 metre well on the same licence will validate 13 sections.

Lands remaining in the licence for a further intermediate term will include all rights originally granted. The intermediate term licence takes on the same characteristics as a primary term petroleum and natural gas lease. The intermediate term licence must be proved capable of producing in order to continue indefinitely beyond its 5-year term.

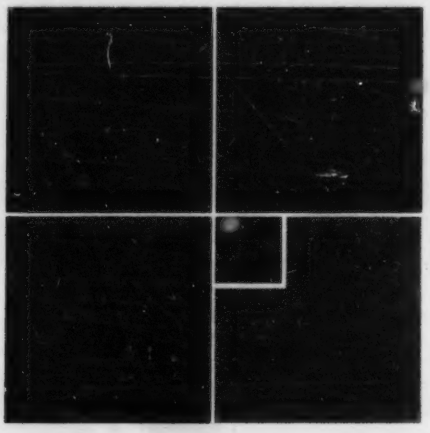
Licences issued after December 31, 2001 will, at expiry of the initial term, be subject to reversion of rights below the deepest zone penetrated by the validating or grouping well.

Petroleum and Natural Gas Lease

The five-year petroleum and natural gas lease that was introduced in 1976 has remained unchanged since that time. All leases grant the right to drill for and recover oil and/or gas with respect to rights granted.

Figure 7

Grouping/Validation based on off-location well within spacing unit



☼ Grouping Well

CONTINUATION OF PRODUCTIVE AGREEMENTS

When a lease reaches the end of its primary term, or a licence the end of its intermediate term, it expires unless the holder can prove that it is productive of petroleum and/or natural gas. Each spacing unit is assessed individually, so that an agreement may expire in its entirety, be continued in its entirety, or be continued with respect to a portion only of its area.

The requirements for continuation are set out in the Petroleum and Natural Gas Tenure Regulation. A spacing unit is eligible to be continued if the holder applies for continuation, and if:

- it contains a productive well;
- it is subject to a unit agreement;
- it is subject to an obligation to pay offset compensation;
- it is subject to a gas storage unit agreement; or
- it is considered to be productive, as demonstrated by geological mapping and other technical information.

Lands that are considered productive in one or more of these categories are continued to the base of the deepest productive zone in each spacing unit. Lands and zones that are not productive, or that have not been proven productive, revert to the Crown ***(See Figure 8)***.

A spacing unit may be granted limited continuation if it is not proven productive but appears to the Department to be potentially productive ***(See Figure 9)***. Upon payment of a non-refundable acceptance fee of $25 per hectare, the holder may continue the area for one year, down to the base of the potentially productive zone. If, at the end of that year, the holder again fails to prove productivity, the lands will expire and revert to the Crown.

Figure 8

Continuation of a two-section agreement with two different producing zones

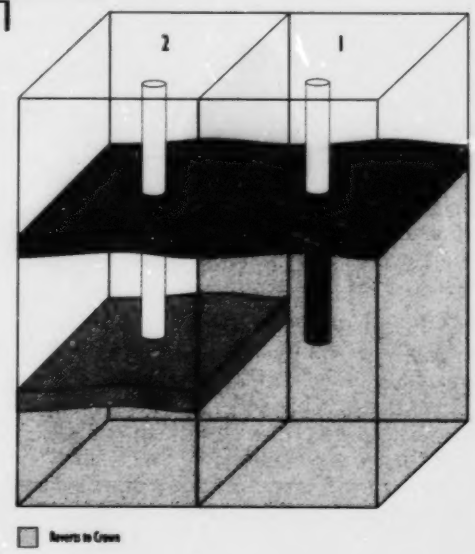
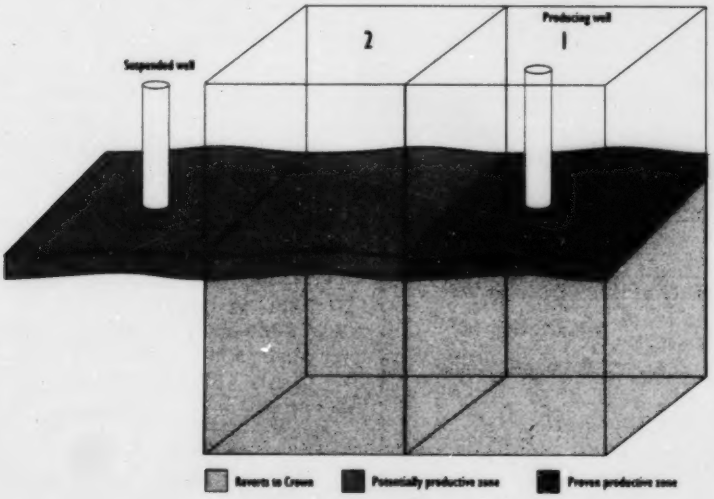
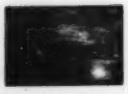
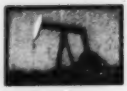


Figure 9

Expiring two-section agreement with potentially productive lands





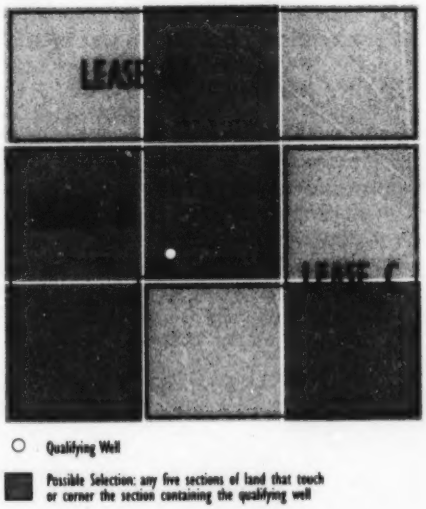


A temporary form of continuation is available where a drilling program is undertaken near the end of the term of the agreement. If a well is drilling at expiry, or is rig-released during the last three months of the term, it is categorized as a qualifying well with respect to the expiring lands. Any of the lands evaluated by that well may continue initially for six months following its rig release date. The drilling of subsequent wells will earn additional three-month periods of continuation until the drilling program is complete. There is no reversion of deeper rights during this temporary form of continuation, all rights being retained in the agreement until the continuation of the agreement is finalized.

For ease of administration, up to five sections in one lease may be continued on the basis of a qualifying well, without the need to submit technical data. In addition, up to five sections may be selected from more than one lease, without the submission of technical data, provided the five sections being selected are no more than one intervening section away from the section containing the qualifying well. All sections selected must contain some petroleum and/or natural gas rights that would be evaluated by the qualifying well *(see Figure 10)*.

Figure 10

Selection of multiple lease lands based on distance criteria


LEASE
LEASE C
Qualifying Well
Possible Selection: any five sections of land that touch or corner the section containing the qualifying well

Monitoring For Continued Productivity

Once an agreement has been continued beyond the primary term, it remains in that state indefinitely unless something occurs to cause its productivity to be questioned. The abandonment of a well on or near the agreement, or the termination of a unit, may cause the agreement to be reviewed; the knowledge base for the area may be upgraded with the receipt of new information; or someone with an interest in the area may feel that continuation is no longer justified and ask the Department to conduct a review. If there is no longer a valid basis for continuation the Department will issue a one-year notice of non-productivity. The lessee may submit an application demonstrating that the rights under notice are still productive, or allow the rights under notice to expire.

OFFSET REQUIREMENTS

When a well is placed on production, an assumption is made that it will first produce all of the oil or gas from the spacing unit in which it is located, and then begin to drain oil or gas from the adjoining spacing units. If this should happen, the owner of an adjacent spacing unit is neither entitled to any share of the production, nor to any relief from the operator of the well, because the Rule of Capture operates in Alberta. The adjacent owner's only recourse is to drill a well and drain the oil and gas from its' rights before the offsetting well does.

When the producing well is freehold (drilled on a spacing unit owned by someone other than the Crown), drainage of adjoining Crown spacing units will ultimately result in a loss of revenue to the Crown and the people of Alberta, because the royalties on that oil or gas will be paid to the owner of the freehold rights. The Department must therefore take some action to prevent, or obtain compensation for, the drainage.

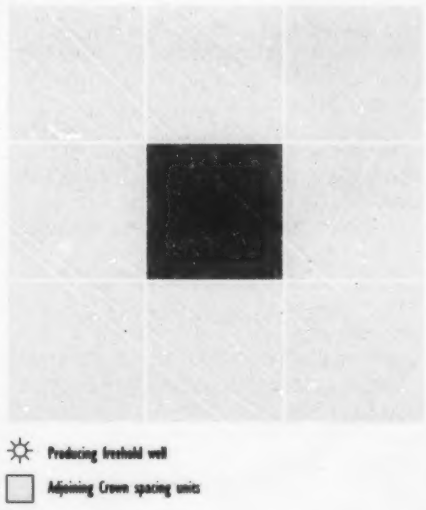
When a freehold well commences the production of oil or gas, the Department serves a notice on each adjoining Crown spacing unit that is part of a lease or a licence (except licences in their initial terms). The notice requires the lessee to place a well on production in the Crown spacing unit in order to offset the drainage by the freehold well. Failure to comply with the notice results in the cancellation of the affected Crown spacing unit *(See Figure 11)*.

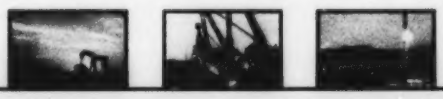
The lessee may defer the obligation to produce a well by electing to pay offset compensation. Under this option, the lessee pays the Crown compensation for the drainage, which is currently equal in the first year to 50 percent of the royalty that would be payable if the freehold well were located on the Crown spacing unit. The compensation payable rises to 100 percent if the election is in effect for more than a year.

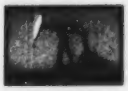
Surrender is another option open to the lessee. The lessee may surrender the rights within the affected spacing unit, down to the base of the offset zone, except for any zones that are producing, unitized, subject to a gas storage unit agreement, or otherwise demonstrably capable of production. This option allows them to retain the rights below the offset zone, as well as any productive zones. If the Crown lessee can demonstrate to the Department's satisfaction that the freehold well is not draining Crown reserves, the notice is withdrawn.

Figure 11

Producing freehold well and adjoining Crown spacing units







UNITIZATION

Parties who have working interests or royalty interests in oil and gas reservoirs may combine their agreements (except licences in their initial term) into a unit and operate them as a single integrated entity. The purpose may be to achieve a more efficient and cost-effective operation, or to meet EUB requirements for common ownership so that a secondary recovery scheme can be implemented.

When the working interest owners have agreed to form a unit, one of them is designated as the unit operator. The operator facilitates and co-ordinates the negotiation of unit equity among the owners. The area within the unit is divided into tracts, and each tract is assigned a value, expressed as a percentage. This value is called the "tract participation factor." It may be based on one or more of a number of technical parameters, such as hydrocarbon pore volume, remaining recoverable reserves or original oil in place.

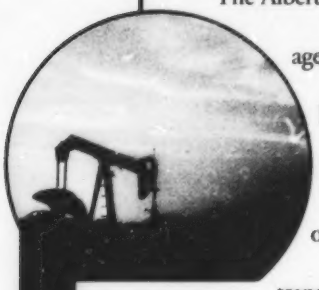
The Crown participates in units only as a mineral rights (royalty) owner; it does not have a legislative role. The Department, therefore, only becomes involved in units that contain Crown rights. The Department reviews the unit area for productivity and evaluates the tract participation factors to ensure that they are fair and reasonable.

The unit agreement becomes effective and binding on all parties when it has been executed by the working interest owners and royalty owners. Each working interest owner contributes to the unit costs in proportion to his tract participation factor and receives production or revenues in the same proportion, whether or not there is a well physically located on his lease. Royalty owners also receive revenue in proportion to their tract participation factors, but do not pay any costs.

Of the wells already existing within the unit area, only those necessary for the efficient production of the resource will be operated, and any unnecessary wells will be shut in or abandoned. If additional wells are required, they will be drilled by the unit operator on behalf of the unit, and the costs shared among the working interest owners.

Once a unit has been formed, it remains in effect until there is no longer any need for the co-coordinated management of the reservoir. When the unit reaches the end of its usefulness it is terminated by the unit operator and the agreements contained in it become subject, once again, to normal land tenure requirements for productivity. If the unit operator does not terminate an inactive unit, the Crown has the ability to withdraw from it, so that the Crown rights can be freed up for re-acquisition.

Role of the Alberta Energy and Utilities Board in Oil and Gas Management



The Alberta Energy and Utilities Board (EUB) is an independent, quasi-judicial agency of the Government of Alberta reporting to the Minister of Energy, with responsibility to regulate the safe, responsible and efficient development of Alberta's energy resources: oil, natural gas, oil sands, coal, and electrical energy; and the pipeline and transmission lines to move the resources to market.

The EUB also regulates rates and terms of service of investor-owned gas, electric, and water utility services in Alberta, as well as the major intra-Alberta gas transmission system.

While petroleum and natural gas leases and licences grant the right to drill for and recover oil and gas, the physical operations relating to drilling and production, on both Crown and freehold minerals, are regulated by the EUB.

The EUB issues licences to drill wells and determines the spacing of wells being drilled into individual reservoirs to ensure efficient drainage of the resource. It regulates production rates to prevent reservoir damage, and may compel operators to implement secondary recovery schemes for the same reason.

In addition, the EUB determines and enforces the safety procedures necessary for the drilling of wells. Environmental aspects regulated by the EUB include routine well-site operations, such as those for the containment and disposal of drilling fluids and for the special measures necessary when drilling into formations that contain hydrogen sulphide.

The EUB is responsible for formulating Zone Designations and Deeper Rights Reversion Zone Designations at the request of the Department. It may also be called upon to resolve differences of opinion in the interpretation of these designations, particularly in areas that are geologically complex.

Public hearings may be held to resolve equity issues between operators, and where energy developments have the potential to affect the public.

The EUB requires the submission of well information from operators and makes it available to the public (after holding it confidential for one year after drilling, in the case of exploratory wells). This information includes drilling, testing and completion records, drill core and cuttings, fluid analyses, flow rates and pressures, logs and monthly production quantities, but does not include geophysical data. The EUB also compiles and publishes aggregated information such as reservoir characteristics, performance and remaining reserves. This is available from:

EUB Information Services

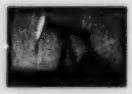
640-5th Avenue SW

Calgary Alberta T2P 3G4

Tel (403) 297-8190.

GLOSSARY

Acre – Imperial unit of areal measurement, 43,560 square feet. There are 640 acres in a section. Imperial measures are no longer used in Alberta legislation, and area is now measured in hectares.



Continuation – refers to the system in place for allowing lessees to retain the productive rights in their agreements past the expiry date. An expiring agreement is reviewed in accordance with the provisions of the Petroleum and Natural Gas Tenure Regulation and is continued indefinitely with respect to the lands and zones that have been proved to be productive (section 15). Other forms of temporary continuation are available for agreements that are only potentially productive (section 17), or on which a drilling program is being conducted at expiry (section 16).

Deeper rights reversion – refers to the principle that unproven zones are returned to the Crown at the expiry of an agreement, as well as unproven lands.

Deeper Rights Reversion Zone Designation (DRRZD) – identifies a zone by its name. As noted in ERCB Decision 95-10, historically, the name of the zone identified within type wells takes precedence over the depths identified in terms of utilizing a DRRZD. DRRZDs are used primarily for deeper rights reversion, but can also be used for other purposes, such as offsets. See also Zone Designation.

EUB – Alberta Energy and Utilities Board, also referred to as "the Board", succeeded the Energy Resources Conservation Board when it was merged with the Public Utilities Board in February 1995.

Freehold rights – mineral rights not owned by the Crown in right of Alberta. These mineral rights may be owned by the Crown in right of Canada, by corporations or individuals.

Freehold well – a well that is drilled on freehold rights.

Gas storage unit agreement – an agreement that establishes a reservoir as one in which natural gas may be stored after it was produced from its native reservoir.

Grouping – an arrangement that allows petroleum and natural gas licences to share the validation entitlement of a single well.

Hectare – a metric unit of areal measurement approximately equal to 2.5 acres. There are 256 hectares in a section.

Hydrogen sulphide – a flammable, colourless gas, commonly known as sour gas or H_2S, that has an odour of rotten eggs. It is corrosive and poisonous and, if allowed to escape into the atmosphere, is potentially lethal to humans and animals. Great care must therefore be taken when drilling into a reservoir know to contain hydrogen sulphide.

Information Letters and Bulletins – publications issued periodically by the Department of Energy to advise industry clients of changes in policy and pricing, to communicate proposed changes to legislation and business rules, and to solicit feedback to proposals.

Initial term – the first period of a licence term, beginning with the term commencement date and continuing for two years for a Plains licence, four years for a Northern licence and five years for a Foothills licence.

Intermediate term – the second period of a licence term, beginning with the day following the expiry of the initial term and continuing for five years, regardless of the location of their licence.

Lessee – defined in the Mines and Minerals Act as the holder according to the records of the Department of an agreement. The term lessees may therefore refer to holders of leases or licences or both, depending on the context in which it is used.

Location – defined in the Petroleum and Natural Gas Tenure Regulation as being the surface area of an agreement and the zones and rights contained within that particular agreement.

Mapping – geological mapping such as net pay, hydrocarbon pore volume and structure maps, supported by cross-sections and any other data that establishes the areal extent of a pool.

Mineral rights – entitlement, through ownership or a leasing arrangement, to produce and sell the minerals in a parcel of land.

Minimum depth – the required depth a well must be drilled in order to validate a licence for the purpose of conversion to Intermediate Term. "Minimum depth" is defined in the Petroleum and Natural Gas Tenure Regulation as:

(i) 150 metres of measured depth in the Plains Region or the Northern Region and 300 metres of measured depth in the Foothills Region, or

(ii) a lesser depth approved by the Minister in any particular case;

Notice of non-productivity – a one-year notice issued pursuant to section 18 of the Petroleum and Natural Gas Tenure Regulation, advising a lessee that all or part of an agreement is no longer considered productive. The recipient may respond to the notice and provide evidence that demonstrates that the agreement is still productive, or may allow the lands and/or rights to expire.

Offset compensation – compensation that is payable to the Crown by a lessee whose agreement is offset by a producing freehold well. The lessee is required to put a well on production to offset the potential drainage by the freehold well, but may elect to defer the drilling of that well by paying offset compensation to the Crown.

Offset zone – according to the context in which it is used, may mean either the zone from which a freehold well is producing or the corresponding zone in the adjoining Crown spacing unit.

Paying quantity – this term has been used in the Alberta tenure legislation and regulations for many years, but has never been legally defined. By policy it is determined by the Department on a case-by-case basis, with a number of factors - such as production, tests, reserves, logs and mapping of wells on and near the lease - taken into account.

Potentially productive – used to refer to a well, a zone or a spacing unit that cannot be demonstrated at the required level of proof to be productive, but displays indications that it might be productive if further work were conducted.

Primary term – the first period of a lease term, beginning with the term commencement date and continuing for five years.

Producing well – a well that is physically producing oil or gas, according to the records of the EUB and any other information available to the Minister.

Productive – used to refer to a well, a zone or a spacing unit that has been proved to be capable of producing petroleum or natural gas in paying quantity, whether or not it is physically producing.

Public tender – the method used by the Department of Energy for conducting sales of oil and gas rights. Interested parties submit sealed bids by a certain date and time, and the rights are awarded to the highest bidder.

Rental waivers – a system whereby the drilling of a well on an agreement issued prior to January 1, 1998 would entitle the holder of that agreement to a waiver of future rental payments.

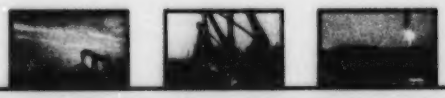
Rig release date – the date on which, according to the records of the EUB, all drilling, logging and testing operations on a well have been completed and the rig is released from its contract. This term is now used in the statute and regulations instead of finished drilling date.

Royalty interest – an ownership interest in mineral rights.

Royalty owner – an individual or corporation who owns a royalty interest. A royalty owner who leases out his rights to a working interest owner is usually entitled to a share of the production obtained form the rights.

Rule of capture – common law principle stating that the production obtained through a well belongs to the person from whose rights the well is producing. If the well drains all of the oil or gas from beneath that property and begins to drain from an adjacent property, the owner of that adjacent property is not entitled to any share of the production, nor to any relief from the operator of the well.

Sale – process by which the Department of Energy disposes of agreements. Sales of petroleum and natural gas agreements are held in Calgary at two-week intervals.



Section – an area of land comprising approximately 256 hectares. In the Imperial system it was one square mile, and contained 640 acres. The size of a section may deviate from the standard, but for most purposes it is deemed to contain 256 hectares.

Secondary recovery scheme – a scheme approved by the EUB for enhancing the performance of a reservoir. Fluids such as gas or water are injected into the formation to restore formation pressure and fluid flow, thereby extending the productive life of the pool.

Spacing unit – the area allocated by the EUB for the purpose of drilling for and producing oil or gas. The standard spacing units are one section for gas and a quarter-section for oil, but these may be reduced on application to the EUB if an operator can demonstrate that the optimum drainage radius for a specific zone and substance in a given area is smaller than the standard.

Spud – commencement of the drilling of a well.

Tenure – term used to describe the system whereby mineral rights are managed by the Department of Energy and disposed to individuals and companies as agreements.

Township – a term used in the "Alberta Township System". Depending on the context in which it is used, it refers either to a six square mile area comprising 36 sections, or to a row of townships spanning form east to west across Alberta. Township 1 lies at the southernmost boundary of Alberta, and Township 126 lies at the northernmost boundary.

Undisposed – used to refer to Crown mineral rights that are not subject to an agreement and may therefore be available for acquisition. The Mines and Minerals Act prohibits unauthorized operations on undisposed Crown rights, although geophysical activity is permitted.

Unit agreement – an agreement amongst the working interest owners and royalty owners in an oil or gas pool for the co-operative operation of the pool. Also includes Production Allocation Unit Agreement, which is a small unit containing a single well.

Unit operator – the party designated by a unit agreement as the operator of the unit.

Unitized – used to refer to a zone or a spacing unit that is subject to a unit agreement.

Working interest – a right to produce and dispose of minerals, associated with the responsibility for the costs of production and disposal. A working interest is usually acquired from the royalty owner of the mineral rights through a leasing arrangement.

Working interest owner – an individual or corporation who owns a working interest.

Zone – defined in the Petroleum and Natural Gas Tenure Regulation as a stratum or series of strata considered by the Minister to be a zone for the purposes of this Regulation. In many cases zones may be geological formations or members, but in some instances where they are larger (geological groups) and include more than one formation (the Mannville zone, for instance, includes numerous formations).

Zone Designation – a zone designation (ZD) designates a lithostratigraphic zone described specifically by the depths identified in a particular well. ZDs are used, for instance, to describe the zones included in natural gas leases. When a ZD is being used, the depths and the interval take precedence over the name given to the zone. See also Deeper Rights Reversion Zone Designation.